

## ABSTRACT OF THE DISCLOSURE

Disc openers (14) for use with an air seeder (10), or other no-till drill and the like, configured for seeding and fertilizing a field (G) for crop production are disclosed. The  
5 representative opener (14b) broadly includes a drawbar assembly (16), a disc assembly (18) including a coulter disc (20) and a gauge wheel (22), a seed boot (24), a fertilizer injector wing (26), a firming wheel assembly (28), and a closing wheel assembly (30). The inventive fertilizer injector wing (26) is configured for fixed attachment to the seed boot (24) and broadly includes a body (48), including an angled outboard portion (56), a toxic fertilizer  
10 injector (50), and a non-toxic fertilizer injector (52). The opener (14b) with the unique fertilizer injector wing (26) is configured to place the seed row (S) and the dedicated fertilizer band (DB) at an optimum geometric positional alignment relative to the seed row (S), in a single, low soil disturbing planting pass without disrupting the seed bed (BS). The inventive wing (26) enables a toxic charge (TC) of the fertilizer (N,P) – a charge containing the  
15 optimum nutrient package to sustain season long growth of the crop – to be placed sufficiently close to the seed (S) while minimizing soil disturbance so that weed growth and moisture loss are minimized and crop yield is maximized.